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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/500,304	02/08/2000	Francoise Groliere	PHF-99,508	2404

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EXAMINER	
LAROSE, COLIN M	
ART UNIT	**PAPER NUMBER**
2623	

DATE MAILED: 02/09/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/500,304	GROLIERE, FRANCOISE	
	Examiner	Art Unit	
	Colin M. LaRose	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Arguments

1. Applicants' Request for Consideration filed 29 December 2003, has been entered and made of record.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 6 have been fully considered but they are not persuasive for at least the following reasons.

Applicant argues that the combination of Zhou and Read is invalid because modifying Zhou by Read as cited by the Examiner would "change the principle of operation" of Zhou. Applicant cites *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) to accompany the argument that Zhou and Read cannot be properly combined. In the cited case, the court ruled that the combination of references for rejecting a claim was improper because modifying the primary reference (Chinnery) by the secondary reference (Jepson) "would require a substantial reconstruction and redesign of the elements shown in Chinnery et al. as well as a change in the basic principles under which the Chinnery et al. construction was designed to operate."

In particular, the court noted:

> The seal construction disclosed in Chinnery et al. is such that the "interference press fit" which that patent calls for is alone relied on to keep the seal tight. There is nothing in the Chinnery et al. patent to show how the resilient sealing element is maintained in resilient contact with the bore otherwise than by the resiliency of the rubber. If and when that resiliency is lost, the sealing effect will be impaired.
>
> Considering the incompressible nature of the rubber in the sealing element disclosed in Chinnery et al., its stiffening and reinforcement by the cylindrical sheet metal member, and its "interference press fit" in the bore, it seems clear to us that the Chinnery et al. seal cannot function in the manner of

> appellant's seal. Now, as to the contention that Jepson would suggest inserting a set of spring fingers, the resilient element of Chinnery et al. is forced so tightly into the bore and is so "stiffened" that the use of the resilient spring fingers of Jepson could not possibly increase the resilient deformation of the Chinnery et al. seal in the direction of the bore or increase the sealing engagement of the seal with the bore. The teaching of the Chinnery et al. patent points away from the addition of any spring element. On the other hand, we find nothing in the disclosure of Jepson's coffee maker gasket to suggest that any part of it has applicability to shaft seals. The two arts are at least somewhat remote from each other even if they both involve sealing.
>
> We, therefore, find that Chinnery et al. did not teach the shaft sealing art how to solve the problems which existed in that art at the time of appellant's invention. We hold, further, that the combination of Jepson with Chinnery et al. is not a proper ground for rejection of the claims here on appeal. This suggested combination of references would require a substantial reconstruction and redesign of the elements shown in Chinnery et al. as well as a change in the basic principles under which the Chinnery et al. construction was designed to operate. (emphasis added)

Thus, the court found that Chinnery teaches away from the addition of the spring elements found in Jepson, and that the combination of Chinnery and Jepson would require a substantial redesign and change in the basic principle of operation in order to meet the claimed limitations.

3. In contrast, the combination of Zhou and Read for the present invention does not require such a "substantial redesign" or a major change in the "basic principle" of operation. Both Zhou and Read are directed towards systems for deblocking images. Both references achieve the same end, albeit via slightly different means. Zhou, as cited in the previous Office action, performs a deblocking operation based only if the average difference of columns or rows of pixels at a boundary are sufficiently dissimilar, whereas Read performs the deblocking based on the difference between two individual pixels located at the boundary.

The proposed combination produces a system that utilizes Read's criteria for performing the deblocking operation instead of Zhou's criteria. At step 215, figure 2 of Read, boundary pixels (e.g. B and C of figure 3) are compared; then, the deblocking filter (235) will be applied only if the boundary pixels are sufficiently similar. Read's comparing of individual pixels for similarity is not computationally intense and allows deblocking to be effected in real-time, as noted by Read at column 5, lines 4-10. Therefore, there is explicit motivation to utilize Read's boundary pixel comparison scheme in lieu of Zhou's boundary region comparison scheme for the purposes of determining whether a deblocking filtering operation should be applied at a boundary.

Examiner contends that modifying Zhou by Read in the proposed manner would not require substantial redesign of Zhou's system; it would only change Zhou such that deblocking is selected and applied based on individual pixels rather than entire boundary regions. Also, modifying Zhou by Read would not change the basic principle of operation of Zhou, since both Zhou and Read are directed to the specific task of selectively deblocking boundaries.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,236,764 by Zhou and U.S. Patent 5,796,875 by Read.

Regarding claim 1, Zhou discloses a method (figure 5) of decoding data representing a sequence of pictures previously divided into blocks and coded, comprising, for each successive picture, at least the steps of:

decoding said data (i.e. image data is input from a decoder as in figure 4);

filtering the decoded data (figure5: filtering step 107 via step 110 for the chrominance components);

said filtering step being applied to at least one pixel (e.g. $a_{0,7}$, figure 6) component of a selected segment (e.g. segment $[a_{0,7} : b_{0,0}]$, figure 6) of consecutive pixels located on a single line or column of the current picture and on both sides of a boundary between two blocks (i.e. blocks A and B, separated by boundary 122), so that the boundary divides the segment into two parts,

wherein said filtering step is applied only if the pixels at the boundary have chrominance components that agree with a similarity criterion (Zhou calculates a "boundary value" (eq. 13, column 12) from the pixels that lie along the boundary; essentially, the boundary value is a measure of the similarity between the eight pixels on either side of the boundary; the at least one pixel is filtered (107, figure 5 and column 12, lines 48-61) only if the boundary value meets a similarity criterion (106, figure 5), i.e. the pixels are substantially similar; Zhou performs filtering for chrominance at step 110, figure 5).

Zhou discloses that the boundary value is derived from an average difference between all of the pixels that lie along the boundary (see eq. 5, column 11). Therefore, Zhou does not directly compare the chrominance components of the "two pixels" at the ends of said segment for similarity, as claimed.

Read discloses a similar de-blocking system that reduces blocking artifacts based on the similarity of pixels on either side of image blocks. In particular, Read discloses a simplified method of comparing boundary pixels for similarity. In Read's method, blocking artifacts are determined by directly comparing pixel pairs rather than through averaging over a boundary region (column 3, lines 16-41: "at step 210, the first pair of boundary pixels is examined..."). A pixel segment B-C, figure 3, is comprised of two pixels B and C, which are one either side of a boundary. The pixels B and C are then compared in order to determine the presence of any blocking artifacts. B and C are only filtered if their components agree with a similarity criterion (215, figure 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zhou by Read to compare "the two pixels" at the ends, as claimed, rather than comparing averages of boundary regions, since Read discloses that comparing the boundary pixels on a pairwise basis produces simplified computations that are able to be carried out in real time (column 5, lines 2-10).

Regarding claim 2, Zhou, as modified by Read, teaches the filtering step (Zhou: figure 5, filtering step 107 via step 110) comprises:

comparing the respective chrominance components of the two pixels (Read: 215, figure 2: two pixels are compared); and

filtering only if the difference between said respective chrominance components is lower than a predetermined threshold (Read: 235, figure 2: filtering is only carried out if the boundary pixels' (chrominance) components are substantially similar, as determined by step 215).

Regarding claim 3, Zhou, as modified by Read, teaches the filtering step (Zhou: figure 5, filtering step 107) is applied only if the two pixels at the ends of a part of said segment (i.e. both pixels B and C in figure 3 of Read are at the end of one part of the segment) have luminance components that agree with a similarity criterion (Read: 235, figure 2: filtering is only carried out if the boundary pixels' (luminance) components are substantially similar, as determined by step 215).

Regarding claim 4, Zhou, as modified by Read, teaches the filtering step (Zhou: figure 5, filtering step 107) is applied only if, for each part of the segment, the two pixels at the ends of said segment (i.e. pixels B and C) have luminance components that agree with a similarity criterion (Read: 235, figure 2: filtering is only carried out if the boundary pixels' (luminance) components are substantially similar, as determined by step 215).

Regarding claim 5, Regarding claim 4, Zhou, as modified by Read, teaches the filtering step (Zhou: figure 5, filtering step 107) is applied only if the two consecutive pixels of said segment located on each side of the boundary (i.e. B and C are consecutive pixels located on either side of the boundary) have luminance components that agree with a similarity criterion (Read: 235, figure 2: filtering is only carried out if the boundary pixels' (luminance) components are substantially similar, as determined by step 215).

Regarding claim 6, Zhou discloses a device (figure 4) of decoding data corresponding to a sequence of pictures previously divided into blocks and coded, comprising:

means for decoding the coded data (i.e. image data is input from a decoder); and

means (processor 88, figure 4) for filtering a selected segment of consecutive pixels (e.g. segment [$a_{0,7}$: $b_{0,0}$], figure 6) located on both sides of any boundary between two blocks, with at least one pixel on each side of the boundary,

wherein the device also comprises switching means (e.g. 106, figure 5, as implemented by processor 88, figure 4) for replacing said filtering means by a direct connection if the pixels at the boundary have chrominance components that do not agree with a similarity criterion.

Zhou, as stated above for claim 1, does not directly compare the chrominance components of the "two pixels" at the ends of said segment for similarity, as claimed.

Read discloses a similar de-blocking system that reduces blocking artifacts based on the similarity of pixels on either side of image blocks. In particular, Read discloses a simplified system of comparing boundary pixels for similarity. In Read's system, boundary artifacts are determined by directly comparing pixel pairs rather than through averaging over a given region (column 3, lines 16-41: "at step 210, the first pair of boundary pixels is examined..."). A pixel segment B-C, figure 3, is comprised of two pixels B and C, which are one either side of a boundary. The pixels B and C are then compared in order to determine the presence of any blocking artifacts. B and C are only filtered if their components agree with a similarity criterion (215, figure 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zhou by Read to compare "the two pixels" at the ends, as claimed, rather than comparing averages of boundary regions, since Read discloses that comparing the pixels on a pairwise basis produces simplified computations that are able to be carried out in real time (column 5, lines 2-10).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. The examiner can normally be reached Monday through Thursday from 8:00 to 5:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (703) 306-0377.

CML

Group Art Unit 2623

5 February 2004

AMELIA M. AU
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